

**AMENDMENTS TO THE CLAIMS**

This listing of claims replaces all prior versions and listings of claims in the application.

**Listing of Claims:**

1-34 and 41 (Cancelled)

35. (Currently Amended) A method of treating an lipoprotein lipase (LPL)-responsive disease hyperlipidemia in a subject, comprising administering to the subject an effective amount of an LPL S447X therapeutic effective to lower triglycerides and to raise HDL-C, wherein the LPL S447X therapeutic comprises comprising an LPL S447X nucleic acid encoding an LPL S447X protein.

36. (Currently Amended) The method of claim 35, wherein the LPL-responsive disease is hyperlipidemia is associated with LPL or ApoE deficiency.

37. (Currently Amended) The method of claim 35, wherein the LPL-responsive disease hyperlipidemia is associated with complete LPL deficiency.

38. (Previously Presented) The method of claim 35, wherein the amino acid sequence of the LPL S447X protein comprises a contiguous segment having at least 90% sequence identity to SEQ ID NO:3 when optimally aligned, and wherein the LPL S447X protein lacks amino acids corresponding to amino acids 447 and 448 of SEQ ID NO:3 when optimally aligned.

39. (Previously Presented) The method of claim 38, wherein the LPL S447X protein has greater LPL activity than a wild type LPL of SEQ ID NO:3.

40. (Currently Amended) The method of claim 38, wherein the LPL S447X therapeutic is the LPL S447X nucleic acid, and the LPL S447X nucleic acid comprises a DNA coding sequence encoding an RNA having at least 90% sequence identity to nucleotides 256 through 1599 of SEQ ID NO:4.

41. (Cancelled) The method of claim 38, wherein the LPL S447X therapeutic is the LPL S447X nucleic acid, and the LPL S447X nucleic acid comprises a DNA coding sequence that hybridizes under stringent conditions to nucleotides 256 through 1599 of SEQ ID NO:4.

42. (Previously Presented) The method of claim 38, wherein the contiguous segment has at least 95% sequence identity to SEQ ID NO:1.

43. (Currently Amended) The method of claim 38, wherein the LPL S447X therapeutic is the LPL S447X nucleic acid, and the LPL S447X therapeutic is administered to the patient in a gene therapy vector.

44. (Previously Presented) The method of claim 39, wherein the LPL S447X therapeutic is the LPL S447X nucleic acid, and the LPL S447X therapeutic is administered to the patient in a gene therapy vector.

45. (Currently Amended) The method of claim 40, wherein the LPL S447X therapeutic is the LPL S447X nucleic acid, and the LPL S447X therapeutic is administered to the patient in a gene therapy vector.

46. (Previously Presented) The method of claim 41, wherein the LPL S447X therapeutic is the LPL S447X nucleic acid, and the LPL S447X therapeutic is administered to the patient in a gene therapy vector.

47. (Previously Presented) The method of claim 43, wherein the gene therapy vector comprises a viral vector.

48. (Previously Presented) The method of claim 44, wherein the gene therapy vector comprises a viral vector.

49. (Previously Presented) The method of claim 45, wherein the gene therapy vector comprises a viral vector.

50. (Previously Presented) The method of claim 46, wherein the gene therapy vector comprises a viral vector.

51. (Previously Presented) The method of claim 35, wherein the subject is a human.

52. (Withdrawn) A gene therapy vector comprising an LPL S447X nucleic acid encoding an LPL S447X protein, wherein the amino acid sequence of the LPL S447X protein comprises a contiguous segment having at least 90% sequence identity to SEQ ID NO:3 when optimally aligned, and wherein the LPL S447X protein lacks amino acids corresponding to amino acids 447 and 448 of SEQ ID NO:3 when optimally aligned.

53. (Withdrawn) The gene therapy vector of claim 52, wherein the LPL S447X protein has greater LPL activity than a wild type LPL of SEQ ID NO:3.

54. (Withdrawn) The gene therapy vector of claim 52, wherein the LPL S447X nucleic acid comprises a DNA coding sequence encoding an RNA having at least 90% sequence identity to nucleotides 256 through 1599 of SEQ ID NO:4.

55. (Withdrawn) The gene therapy vector of claim 52, wherein the LPL S447X nucleic acid comprises a DNA coding sequence that hybridizes under stringent conditions to nucleotides 256 through 1599 of SEQ ID NO:4.

56. (Withdrawn) The gene therapy vector of claim 52, wherein the contiguous segment has at least 95% sequence identity to SEQ ID NO:1.

57. (Withdrawn) The gene therapy vector of claim 52, wherein the gene therapy vector comprises a viral vector.